vacuum, e.g. a vacuum pump. As ordinarily skilled people know, by applying a vacuum, solvents can be evaporated. The device recited in claim 13 is capable of evacuating samples contained within sample vessels, and method claim 24 recites the step of heating, plainly for evaporation.

U.S. Patent 3977935 (Kowarski) discloses a device wherein an array of sample vessels is covered by an enclosure, which is connected to a vacuum pump. Kowarski does not disclose means for connecting *the filling openings* of the sample vessels in a sealing arrangement to a vacuum source. Kowarski only discloses a sealing arrangement of an enclosure (36) with holder (37) of the sample vessels.

U.S. Patent 5569357 (Kuhn et al) also fails to disclose a connection means for connecting the filling openings of sample vessels with means for providing a vacuum in a hermetically sealing arrangement. In particular, Figure 6 shows that the cover wall and the unnumbered cover plate defines the space from which a vacuum means sucks the evaporation products, via hole 100. All filling openings are arranged freely accessible within this space.

US 3 847 200 (Kopp and Holland, referred to hereafter as "Kopp et al.") fails as well to disclose a connection means which connects in a sealing arrangement the openings of individual or groups of sample vessels with a means for producing a vacuum. The cover 24 is sealingly arranged with the help of a sealing ring 25a to the body 13 of the device. None of the openings is contacted by the connecting means. The openings are arranged freely within the body.

Non-obviousness of claim 13

Starting from Kowarski, the object of the present invention would have been to provide an apparatus for evaporating liquids capable of evaporating different kind of a samples and avoiding possible cross contamination of the samples.

According to the present invention the object is solved by a device for evaporating samples in sample vessels, wherein the device comprises connection means connectable to the filling openings by way of which the filling openings of the sample vessels individually or in groups are hermetically connectable to means for producing a vacuum and thereby may be evacuated.

Kowarski teaches the covering of the sample vessels by one enclosure and therefore generating one large and common space for the application of vacuum (column 2, lines 42 to

50). In order to avoid bumping of the liquid, Kowarski teaches one to use at least two different subatmospheric pressure levels (column 2, lines 50 to 55 and column 3, lines 46 to 49). The teaching of Kowarski clearly leads a skilled person in a different direction than the present invention. Kowarski is further silent to the problem of evaporating samples having different components, different solvents or a solvent mixture. The subject matter of claim 13 is therefore non-obvious over Kowarski.

Nor is claim 13 obvious from Kuhn et al. Kuhn et al. teaches one to provide a gas supply system for directing gas into a container (column 3, lines 14 to 16). By providing the gas on the liquid surface a bumping of the liquid is avoided. An inert gas is preferred by Kuhn et al. for preventing contamination of the solution (column 5, lines 42 to 51). As an alternative embodiment, Kuhn teaches the use of an vacuum system instead of the gas supplying system. This vacuum system is only connected to the chamber 14 (column 11, lines 32 to 35).

Both the preferred embodiment (gas supply system) and the alternative embodiment (vacuum system) lead the skilled person in different directions than the present application, which provides a device capable of evaporating solvents from sample vessels while avoiding cross-contamination, or allowing the evaporation of different solvents contained in different sample vessels within one common device. Kuhn et al. is further silent with respect to the problem of evaporating samples containing different solvents or mixtures of solvents. The solution now recited in claim 13 is not obvious from Kuhn et al.

The teaching of Kopp et al. also leads in a different direction than the present application. Kopp et al. provide a cover (24) for enclosing the entire number of vessels 22 for evaporating the samples. The sealing is achieved by the sealing ring 25a which is placed between the cover 24 and body (13, 14). Furthermore, the teaching of supplying a stream of gas through inlets 31 or 34 directly into the vessels 22 leads the skilled person away from the present invention.

Kopp et al. clearly teach that the gas stream is initiated by the low pressure within chamber 27 and the air streams support the evaporation of the solvent (according to DE 23 07 274, which corresponds to US 3847200). See page 5, last sentence to page 6, second sentence: By operating the vacuum pump air coming of the atmosphere is streaming into chamber 26 which serves as connection or supplying device for all 36 nozzle fittings so that an individual stream of air is directed downwardly into each sample vessel. This is caused by the

sub atmospheric pressure in the lower chamber which serves as suction connection-chamber. Claim 13 is therefore inventive over Kopp et al. alone.

Any of the possible combinations of the cited documents would not have led the skilled person to the present invention. All three teach one to cover the arrays of sample vessels by one enclosure, thus generating one common collection space for the evaporated liquids. The skilled person would not have been motivated to combine the documents at all, and even a hypothetic combination of these documents would not have lead to the present invention according to which the filling openings of the vessels are hermetically connected to the vacuum means. Amended claim 13 is not obvious from any combination of the cited documents.

Novelty of Claim 24

The method claimed is used for evaporating samples simultaneously held in several sample vessels, each having a filling opening. Claim 24 recites steps of (a) hermetically connecting the filling opening of each of the vessels to a means for producing a vacuum, (b) heating the samples in said vessels and (c) evacuating said vessels by means of the vacuum.

Kowarski fails to disclose the step of hermetically connecting the filling opening of each of the vessels to a means for producing a vacuum. Only a circumferential area of the supporting holder of the sample vessels is in a sealing arrangement with the enclosure 36.

Kuhn et al. also fails to hermetically connect the filling opening of each of the sample vessel to a means for providing a vacuum. The containers 12 do not show a hermetically sealing of their openings.

Kopp et al. also does not show a hermetical connection of each of the openings of sample vessels to a means for producing a vacuum. Only the hermetic sealing of the body 13 in combination with cover 24 and sealing ring 25a is disclosed.

Non-obviousness of Claim 24

The reasons advanced above with respect to claim 13 are equally applicable to Claim 13. None of the documents provides motivation to connect the filling openings of sample vessels in a hermetic manner, either individually or in groups, with means for producing a vacuum. All the documents teach one, instead, to connect a whole array of samples to a vacuum source; therefore, they teach opposite the present

invention.

We respectfully submit that the claims now presented are patentable over the prior art of record, and that this application is in condition for allowance.

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December 27, 2002

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13. (amended) A device for evaporating samples in sample vessels, each of said vessels being provided with at least one filling opening, said device comprising

holding means for simultaneously holding several sample vessels, and

connection means connectable to the filling openings, by means of which the filling openings of the sample vessels individually or in groups are hermetically connectable to means for producing a vacuum and thereby may be evacuated.

VERSION WITH MARKINGS SHOWING CHANGES MADE

13. A device for evaporating samples in sample vessels, each of said vessels being provided with at least one filling opening, said device comprising

holding means for simultaneously holding several sample vessels,

connection means connectable to the filling openings, by [way] means of which the filling openings of the sample vessels individually or in groups are hermetically connectable to means for producing a vacuum and thereby may be evacuated.

The above described embodiment example of the connection means is particularly preferred. The connection of the vacuum pump may for example be connected to the connection openings on the connection plate or plates via one or more flexible tubings.

Of course also other connection means are conceivable. In place of deepenings arranged on the surface of the connection plate bores may be provided in the inside of a connection plate. In this case a sealing plate may be done away with.

Finally it is also conceivable to connect each of the sample vesses directly via a tubing to a vacuum pump.

Advantageously the holding means and/or the connection means are adaptable to a various number and size of sample vessels. In particular the holding means and/or the connection means may be exchanged according to the size and the number of the applied sample vessels.

In the method according to the invention for processing, in particular for evaporating samples held in sample vessels, preferably there is applied a device as previously described. The samples in the sample vessels are advantageously heated and the sample vessels simultaneously moved. The sample vessels are evacuated individually or in groups. With this the pressure outside the sample vessel is not changed, remaining typically at the surrounding pressure.

BRIEF DESCRIPTION OF THE DRAWINGS

The invention is described in more detail in embodiment examples and by way of the drawings, where

Figure1 is a schematic representation of a device according to the invention,

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